REMARKS

I. Introduction

By the present Amendment, claims 1, 4, 5, 8-10, 13-16, 23, 24, and 26 have been amended. Claims 2, 3, 6, 7, 11, 12, 17-22, and 25 have been cancelled. Claims 27-29 are newly presented for consideration. Accordingly, claims 1, 4, 5, 8-10, 13-16, 23, 24, and 26-29 are now pending in the application. Claims 1, 4, 5, 10, 15, 16, 23, 24, and 27 are independent.

II. Office Action Summary

In the Office Action of August 5, 2008, the Drawings were objected to under 37 CFR §1.83(a). The Specification was objected to under 37 CFR §1.75(d)(1) for failing to provide proper antecedent basis for the claimed subject matter. Claims 9 and 14 were objected to under 37 CFR §1.75(c) as being of improper form. Claims 1-8, 10-13, 15-17, and 23-26 were rejected under 35 USC §112, second paragraph, as being unclear. Claims 1, 2, 4-6, 8, 10, 11, 13, 15-17, and 23-26 were rejected under 35 USC 102(b) as being anticipated by U.S. Patent No. 5,472,603 issued to Schembri. Claims 3, 7, and 12 were rejected under 35 USC §103(a) as being unpatentable over Schembri in view of U.S. Patent No. 6,706,519 issued to Kellogg et al. ("Kellogg"). These rejections are respectfully traversed.

III. Objection to the Drawings

The Drawings were objected to under 37 CFR §1.83(a) for failing to show every feature of the invention specified in the claims. Regarding this rejection, the Office Action indicates that the Drawings fail to illustrate the reagent container that

comprises a hole forming device, containers having a dispensing mechanism, and the liquid outlet port at the side opposite to the rotation center side.

Concurrently submitted herewith, are three (3) Drawing Replacement Sheets containing Figs. 1, 3, and 4. The Figs. 3 and 4 have been amended to identify the liquid outlet port (303). Additionally, Applicants have amended the Specification to incorporate the reference numeral for the liquid outlet port.

Applicants respectfully submit that the reagent container comprising a hole forming device, and containers having a dispensing mechanism are already illustrated in the figures. Specifically, Fig. 1 illustrates the hole forming device identified by reference numeral 13. See paragraph [0038] of the published application. Fig. 14 illustrates a dispensing mechanism in the form of the reagent dispenser (19). See also paragraph [0086].

Based on the foregoing, Applicants respectfully submit that all features of the invention specified in the claims are now illustrated in the Drawings. Withdrawal of this objection is therefore respectfully requested.

IV. Objection to the Specification

The Specification was objected to as failing to provide proper antecedent basis for the claimed subject matter. Regarding this objection, the Office Action alleges that claims 1 and 23 recite the bent flow path portion which "at a particular stage prevents the flow of liquid from the reagent containers which are connected to the capturing sections, and at another stage, forms the liquid flow." The Office Action further indicates that claim 3 recites the reagent container comprising a hole forming device. Claims 13 and 17 are indicated as reciting containers which have a

dispensing mechanism. The Office Action indicates that the Specification has not revealed any support for these limitations.

Applicants respectfully submit that the Specification provides ample support for the bent flow path portion at paragraphs [0007] and [0058]. Specifically, the obstruction of fluid flow and flow of the reagent by centrifugal force is described in these sections. Thus, when the bubbles are generated, the air in the reagent container expands causing the reagent to flow out. Conversely, the reagent is prevented from flowing out by preventing the generation of bubbles. Regarding the containers having a dispensing mechanism, Applicants have already indicated where this feature is illustrated in the figures and discussed in the Specification.

Withdrawal of this objection is therefore respectfully requested.

V. Claim Objections

Claims 9 and 14 were objected to under 37 CFR §1.75(c) as being of improper multiple dependent form. The cancellation of claims 9 and 14 has rendered this particular objection moot.

VI. Rejections under 35 USC §112

Claims 1-8, 10-13, 15-17, and 23-26 were rejected under 35 USC §112, second paragraph, as being unclear for failing to particularly point out and distinctly claim the subject matter regarded as the invention. Regarding this rejection, the Office Action cites various passages that were considered to be unclear and/or otherwise lacking in proper antecedent basis.

By the present Amendment, Applicants have cancelled claims 2, 3, 6, 7, 11, 12, 17, and 25, thereby making part of this ground of this rejection moot. Regarding the remaining claims, Applicants have made various amendments to better clarify

the invention while addressing all the instances of confusion and indefiniteness raised in the Office Action.

Applicants therefore respectfully submit that, as amended, the presently pending claims satisfy the requirements of 35 USC §112, second paragraph. Withdrawal of this rejection is therefore respectfully requested.

VII. Rejections under 35 USC §102

Claims 1, 2, 4-6, 8, 10, 11, 13, 15-17, and 23-26 were rejected under 35 USC §102(b) as being anticipated by Schembri. Regarding this rejection, the Office Action alleges that Schembri discloses an analytical device that comprises a rotatable structure which includes a capturing section, a plurality of containers having exit passages and connected to the capturing section via a flow path. The Office Action further alleges that the flow path includes an elbow siphon. The Office Action indicates that after the rotor slows sufficiently, capillary forces prime the siphon by pulling fluid around the elbow. When the rotor is restarted, the combination of centrifugal and capillary forces draws the remaining fluid out of the holding chamber into the receiving chamber. Applicants respectfully disagree.

By the present Amendment, Applicants have amended independent claim 1 to incorporate the subject matter previously recited in claim 3, and to better define the claimed invention with respect to features that are not shown or suggested by the art of record. As amended, independent claim 1 defines an extractor that comprises a structure body having an extracting device and a hole forming device, the structure body being supported in a rotatable manner. The extracting device comprises a capturing portion that captures specific chemical compounds from a specimen, and a

plurality of reagent containers which hold liquid flowing to the capturing section.

According to independent claim 1:

> said plurality of reagent containers which are connected to said capturing section comprise a liquid outlet port which is provided at a side opposite to a rotation center, namely an outer periphery side, during rotation of said structure body;
>
> said capturing section is held in said extracting device, closer to an outer periphery side than said plurality of reagent containers; and
>
> a flow path is provided which has a bent flow path portion which returns to said rotation center, and which at a particular stage prevents a flow of liquid from said reagent containers which are connected to said capturing sections, and at another stage, forms said liquid flow due to a centrifugal force from a rotation of said extracting device, and a vent hole is formed to a cover for sealing said reagent containers using said hole forming device.

According to the extractor of independent claim 1, the plurality of reagent containers connected to the capturing section include a liquid outlet port that is provided at a side opposite to a rotational center of the structure body during rotations. The capturing section is held in the extracting device closer to an outer periphery side than the plurality of reagent containers. Furthermore, a flow path is provided with a bent flow path portion which returns to the rotation center. At a particular stage, the bent flow path portion prevents a flow of liquid from the reagent containers that are connected to the capturing sections. At another stage, the bent flow path portion forms the liquid flow through a centrifugal force from a rotation of the extracting device. The flow path also includes a vent hole that is formed to a cover for sealing the reagent containers using the hole forming device. According to such an arrangement, it is possible to open an air vent hole in the reagent container using the hole forming device so that air can freely enter, thereby allowing the liquid to more easily become fluidized by the centrifugal force.

In rejecting claim 3, the Office Action had previously alleged that Kellogg disclosed a cover over a rotational structure, and that such covers were well known in the art, even though Schembri did not explicitly disclose this feature. Applicants' review of these references, however, has failed to reveal any disclosure or suggestion for features now recited in independent claim 1. Schembri discloses an analytical rotor that holds a fluid in a chamber and allows mixing with a reagent. The mixed fluid is then transferred to a receiving chamber in the rotor. In the arrangement of Schembri, however, it is not possible for the liquid to flow properly because capillary fluidization cannot be generated.

Kellogg discloses a device for performing microanalytic analyses and procedures. A microsystem platform and a micromanipulation device are provided for manipulating the platform using centripetal force resulting from rotation of the platform in order to move fluid through various microchannels. The in-vitro amplification system of Kellogg, however, does not appear to provide an ability to flow plural reagents with different timings. Furthermore, in order to provide capillary fluidization, Kellogg utilizes a valve positioned midway in the flow path. This arrangement causes a disadvantage in that liquid remaining in the valve can possibly flow into the capturing section during the extraction process.

Contrary to the cited references, the claimed invention does not utilize a valve within any of the flow paths in order to control the liquid fluidization. Rather, the bent flow path and hole forming devices are used to achieve this. The cited references simply fail to provide any disclosure or suggestion for features recited in independent claim 1, such as:

> a flow path is provided which has a bent flow path portion which returns to said rotation center, and which at a particular stage

prevents a flow of liquid from said reagent containers which are connected to said capturing sections, and at another stage, forms said liquid flow due to a centrifugal force from a rotation of said extracting device, and a vent hole is formed to a cover for sealing said reagent containers using said hole forming device.

It is therefore respectfully submitted that independent claim 1 is allowable over the art of record.

By the present Amendment, Applicants have amended independent claims 5 and 10 to incorporate the subject matter previously recited in claims 7 and 12, respectively. These claims now recite various features that are similar to those recited in independent claim 1. In particular, independent claims 5 and 10 each include a structure body that has a hole forming device. Furthermore, these claims each include a bent flow path portion. As previously discussed with respect to independent claim 1, such features are not shown or suggested by the art of record.

It is therefore respectfully submitted that independent claims 5 and 10 are allowable over the art of record.

Claims 8 and 9 depend from independent claim 5, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 5. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

Claims 13 and 14 depend from independent claim 10, and are therefore believed allowable for at least the reasons set forth above with respect to independent claim 10. In addition, these claims each introduce novel elements that independently render them patentable over the art of record.

By the present Amendment, Applicants have amended independent claim 16 to incorporate features such as a structure body having a hole forming device and a

bent flow path portion, similar to those recited in independent claim 1. As previously discussed, such features are not shown or suggested by the art of record.

Applicants further note that the elbow (53) of Schembri is positioned at the innermost peripheral portion of the vessel. Consequently, liquid is prevented from flowing out even when the pressure in the vessel remains high. Furthermore, liquid is forced to pass through the siphon (50) in response to centrifugal force generated. Since liquid reagents cannot flow properly in the device, Schembri utilizes bead-type reagents. Such an arrangement clearly differs from that of independent claim 16.

It is therefore respectfully submitted that independent claim 16 is allowable over the art of record.

As amended, independent claim 23 defines an extractor that comprises a structure body having an extracting device and supported in a rotatable manner. The extracting device includes a capturing section for capturing specific chemical compounds from a specimen and a plurality of reagent containers for holding liquid that flows through the capturing section. According to independent claim 23:

> said plurality of reagent containers which are connected to said capturing section comprise a liquid outlet port which is provided at a side opposite to a rotation center, namely an outer periphery side during rotation of said structure body;
>
> said capturing section is held in said extracting device, closer to an outer periphery side than said plurality of reagent containers; and
>
> a reagent control portion is provided an upstream side of a reagent outlet port which controls a flow of a reagent and which at a particular stage prevents a flow of liquid from said reagent containers which are connected to said capturing section to said capturing sections, and at another stage, forms said liquid flow due to a centrifugal force from a rotation of said extracting device.

According to at least one feature of independent claim 23, the reagent control portion is provided at an upstream side of a reagent outlet port that controls the flow

of the reagent and at a particular stage, prevents flow of liquid from the reagent containers connected to the capturing section. At another stage, the liquid flow is facilitated due to the centrifugal force resulting from rotation of the extracting device. According to such an arrangement, it is possible to prevent or facilitate reagent fluidization by closing or opening the vent hole. In contrast, Schembri discloses an analytical rotor wherein the process of reagent fluidization is controlled by the rotation number and timing of the motor. Such an arrangement clearly differs from that of independent claim 23.

It is therefore respectfully submitted that independent claim 23 is allowable over the art of record.

As amended, independent claim 24 defines an extractor that comprises a structure body having an extracting device and supported in a rotatable manner. The extracting device includes a capturing section for capturing specific chemical compounds from a specimen and a plurality of reagent containers that hold liquid which will flow through the capturing section. The reagent containers separately hold a plurality of washing solutions, and eluents that are used as reagent. The reagent containers also include a reagent outlet for feeding each reagent to the capturing section. Furthermore, the plurality of washing solutions are selectively used at different times and the reagent outlet of washing solutions to be used in earlier timings are positioned closer to the rotational center. According to such as arrangement, it is possible to utilize multiple reagents independently based on their position relative to the rotational center of the extractor.

According to Schembri, the vessels (41), (42), (46), and (60) are merely connected in series and there is no provision for independently controlling the use of

the reagents based on their positional relationships. This arrangement clearly differs from that of the claimed invention.

It is therefore respectfully submitted that independent claim 24 is allowable over the art of record.

VIII. Conclusion

For the reasons stated above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a Notice of Allowance is believed in order, and courteously solicited.

If the Examiner believes that there are any matters which can be resolved by way of either a personal or telephone interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

AUTHORIZATION

Applicants request any shortage or excess in fees in connection with the filing of this paper, including extension of time fees, and for which no other form of payment is offered, be charged or credited to Deposit Account No. 01-2135 (Case: 503.43983X00).

Respectfully submitted,
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Attachment: Three (3) Replacement Drawing Sheets